2008



Climate Report

Overview

This 2008 King County Climate Report is the second annual report on implementation of the 2007 King County Climate Plan, which was published in February 2007. This report is being submitted no later than February 1, 2009, as required by Executive Orders on Global Warming Preparedness PUT 7-5 through 7-8 and King County Council Motion 12362. This document provides a progress report on King County activities to reduce operational and regional greenhouse gas emissions and to anticipate and adapt to projected climate change impacts, based on best current knowledge. It reflects a cross-departmental collaboration that builds on over 15 years of efforts in King County to address the causes of climate change and to prepare for regional climate change impacts.

The mission of the King County Executive Action Group on Climate Change is to lead, educate, and empower the King County government and community to meet the climate change challenges directly and effectively. The overall goal of the King County Climate Plan is to guide county decisions that measurably reduce greenhouse gas emissions and prepare for climate change impacts in regional policies and government operations, practices and investments.

The Executive Action Group on Climate Change continues to work toward these goals in the optimistic spirit of the original King County Climate Plan. Based on the principles of "Climate Prosperity," governments across the country are now recognizing that "the core strategies to create a vibrant economy - innovation, efficiency, strategic investment, and finding better ways to use and reuse resources - are exactly the same steps we need to cope with global climate change now." (Citiwire, October 2008) At the same time, climate change impacts are still occurring - and some more rapidly than ever before. The mandate for climate action remains strong.

2008 Highlighted Accomplishments

Climate Change Mitigation and Carbon Sequestration

King County continues to take steps toward meeting the County's climate stabilization goal. This goal is defined in the 2008 King County Comprehensive Plan as collaborating with other local governments to reduce annual greenhouse gas emissions throughout the region to 80 percent below 2007 levels by 2050. The following are examples of county accomplishments and activities toward this goal.

Greenhouse Gas Accountability and Limits

 Aggressive implementation of operational energy savings measures, resulting in reduction of year 2007 direct greenhouse gas emissions from government operations by more than 6% below year 2000 levels. This exceeded the 1.5% reduction target for year 2007 that had been set as part of the County's membership in the Chicago Climate Exchange. This finding was validated through an audit by the Financial Industry Regulatory Authority.

- Contributions to the development of greenhouse gas emissions accounting rules and regulations, such as: the Department of Transportation's proposal of a methodology that recognizes the beneficial effect of public transportation in reducing emissions from single-occupancy vehicles; and input on the development of Washington State's Greenhouse Gas Emissions Reporting Rule requirements.
- Completion of a draft proposed ordinance to include greenhouse gas emissions reporting in the county's State Environmental Policy Act (SEPA) review of projects.
- Further development of tools and data to support the proposed SEPA policy, including an easy to use worksheet to estimate a SEPA project's emissions as well as extensive work to quantify the expected impacts of related greenhouse gas emissions mitigation strategies.
- Advocacy for establishment of sound Washington State and United States federal climate policy, through direct participation in the Washington State Climate Action Team Implementation Work Groups, as well as through venues such as Climate Communities and the Cool Counties initiative.

Climate-Friendly Transportation Choices

- Addition of over 108,000 hours of new transit service since 2006 through the Transit Now! Initiative, which is connecting high-density communities to new streamlined bus routes.
- Continued promotion of public transit use among King County employees, including a weeklong "Green Your Commute" outreach effort at worksites and collaboration with Healthy Incentives, in support of the existing Commute Trip Reduction program.
- Continuation of the county's participation with Washington State Department of Transportation (WSDOT) and Puget Sound Regional Council (PSRC) in the US DOT's Urban Partnership Grant program to implement a tolling pilot project on SR-520. The project is expected to reduce greenhouse gas emissions by eliminating unnecessary driving trips encouraging transit use, and has received \$140 million in funding, including \$41 million for hybrid buses and a new park and ride lot in Redmond.
- Creation of an agreement for a new auto insurance product, to be tested by the private sector in 2009, in which the premium is based on vehicle miles traveled.

Land Use, Building Design, Efficiency and Materials Management

- Incorporation of many policies that support climate change mitigation and adaptation into the 2008 King County Comprehensive Plan Update, adopted in October 2008.
- Passage in July 2008 of the county's updated Green Building and Sustainable
 Development Ordinance regarding county-owned and county-financed projects.
 Under the ordinance, all county-owned or county-financed eligible new
 construction and major remodel and renovation projects are required to achieve
 the LEED Gold certification. All capital projects that are not eligible or are limited

in their ability to achieve LEED certification (e.g., infrastructure projects) must incorporate cost-effective green building and sustainable development practices using a county-developed "scorecard" or checklist.

- Formation of the Road Services Division Climate Change Steering Committee, to support integration of climate change goals into division decision-making and support the proposed launch of an Environmental Management System.
- Completion of energy audits for three Metro Transit bases.
- Incorporation of green building techniques into design for the renovation of several Department of Transportation facilities.
- Upgrades to the heating, ventilating and air conditioning (HVAC) system of the King County Airport.
- Installment of solar lighting at 38 bus shelter locations, 81 solar signal indicators and a solar trash compactor pilot project.
- Continued the practice of using biodegradable cups and plates and food composting at the Marymoor Park Concert Series.
- Completion of the award winning LEED Platinum Shoreline Recycling and Transfer Station.
- Continued coordination of a program for private commercial and residential grants to encourage green building. In 2008, six grants were distributed for LEED commercial projects, for a total of \$130,000 in awards.
- Production of the annual "Greening in Place: From Policy to Practice" event in September for city and county staff. Approximately 150 people attended the event, with sessions on climate change, low impact development, and green operations and maintenance.
- Development of a model to estimate greenhouse gas emissions reductions under two scenarios: recycling and composting of discarded materials; and discarding of materials into a landfill with 90% collection and conversion into natural gas. Based on related analysis, it was found that in 2008 more than 840,000 metric tons of carbon dioxide equivalent were <u>not</u> emitted into the atmosphere due to the recycling activities of King County residents and businesses.
- Partnership with national and regional stakeholders to develop product stewardship and extended producer responsibility programs and legislation in electronics, fluorescent lights, paint and unwanted telephone books.
- Partnership with the City of Renton, Seattle-King County Public Health, and a
 waste hauler on a sustainable collection pilot reducing garbage collection to
 every-other-week, leading to decreased waste generation, increased recycling
 and decrease in truck traffic. The City of Renton has implemented the collection
 program citywide as of early 2009.
- Participation in regional discussions with western state solid waste professionals to improve GHG accounting systems to assess the emissions impacts from product use, consumption and material management; and to identify material management strategies for immediate implementation.
- Promotion of waste prevention, material reuse, energy conservation, climate friendly materials, composting, construction demolition and recycling, and other

practices that reduce home and business GHG emissions through outreach and promotion programs that encourage behavior change.

Energy Conservation, Efficiency, Clean Energy and Clean Fuels

- Addition of 22 more hybrid-articulated buses to the Metro Transit bus fleet.
- Receipt of two of three expected heavy-duty hybrid trucks as part of the Northwest Hybrid Truck Consortium. The first truck, in service since September 2007, is showing a 30 percent fuel savings over comparable models.
- Completion of the King County Biofuel Report, which analyzed the environmental and fiscal impacts of the County's purchase of biofuels, and continued County use of significant amounts of biodiesel in King County vehicles.
- Publication of the Electric Vehicle Report in October 2008, describing the progress of the county's plug-in hybrid-electric vehicle (PHEV) demonstration project and related activities. Four of the county's 157 Priuses have been converted to PHEVs using lithium-ion battery technology from Hymotion A123 Systems, and have been equipped with GridPoint / V2Green data logging systems, which stream real-time data to Idaho National Labs (INL) for analysis and learning. One of the County's Priuses was previously converted in 2007 by Manzanita Micro, for a current total of 5 fleet-wide. In 2008, Fleet Administration Division also launched a stakeholder group of utilities and agencies related to the INL PHEV Pilot Project.
- Participation and leadership in the Evergreen Fleet Initiative, a coalition of 22 municipal agencies formed from the county's 2007 Clean Vehicles Now! conference, coordinating an effort to engage public fleets in voluntary vehicle emission reduction. Currently, representatives from the King County Department of Transportation and the Department of Natural Resources and Parks are participating in an internal pilot project for this group, working through a challenging set of 18 Best Practices for Fleet Operations, or "Evergreen Fleet Standards."
- Continued leadership in management of the Cedar Hills Regional Landfill, including award-winning best management approaches for landfill gas facilities that result in methane gas collection efficiency of approximately 90-95%. During 2008 the Solid Waste Division partnered with INGENCO, which is constructing a new landfill gas scrubbing facility at the Cedar Hills Regional Landfill. This facility, expected to go online in early 2009, will provide pipeline quality gas to Puget Sound Energy. This gas will then be used for a variety of end uses such as residential home heating.
- In cooperation with the City of Seattle, production of the Energy Audit Guide, a step-by-step guide to identifying and improving a home's energy efficiency.
- Publication and review of a Request for Information on opportunities to use King County biosolids for alternative uses, including energy generation.
- A proposal for significant energy efficiency and cost reduction by disconnecting from steam and retrofitting the King County Courthouse and King County Jail with a modern boiler system, based on a thorough energy audit. The retrofit package would cost a total of \$6.3 million, while providing a 25-year Net Present Value (NPV) savings of over \$5.3 million. This is the equivalent of \$459,000 per

year at the King County adopted discount rate of 10.2 percent. Thus, the project provides facility improvements with an overall project payback of fewer than 10 years. Environmentally, the project is projected to reduce thermal energy consumption in the County Courthouse by at least 30 percent and in the County Jail by 17 percent. It is projected to reduce carbon dioxide emissions by over 1,700 metric tons per year, and county water use by 6.7 million gallons per year.

Equitable Green Economic Development

 In conjunction with the King County Equity and Social Justice Initiative, launch of Opportunity Greenway pilot in summer 2008, offering court-involved young adult students the chance to learn about high wage and high demand "green" career opportunities. Approximately 50 high school students were introduced to green careers in three six-week educational internship programs operated through YouthSource.

Carbon Sequestration

 Exploration of opportunities to enhance carbon sequestration at county-owned lands, and development of a Climate Landowner Incentive Program to encourage actions on privately owned lands that encourage carbon sequestration and resiliency to climate change impacts.

Climate Change Adaptation

Preparing the King County community for regional climate change impacts is a new challenge that King County is undertaking with practical efforts. The following are examples of county accomplishments and activities toward this goal.

Climate Science

- Continued collaboration with the University of Washington Climate Impacts Group on development of reasonable assumptions about climate change impacts for departments and divisions responsible for long-term infrastructure planning.
- Collaboration with the Department of Ecology, Washington Sea Grant and the University of Washington Climate Impacts Group on a training program for coastal managers and planners on how to prepare for climate change.

Public Health, Safety and Emergency Preparedness and Economic Impacts

- Continued progress through the Flood Control Zone District in rebuilding the regional levee system and consequently protecting public health, safety and property from more intense and frequent winter floods that the region is projected to experience in the future.
- Participation in regional dialogue about how to prepare for intense storm events.

Surface Water Management, Freshwater Quality and Water Supply

 Completion of Reclaimed Water Feasibility Study (RWFS) developed to inform decision makers of the current and possible future uses of reclaimed water and

- present key considerations in developing successful programs and projects related to reclaimed water.
- Initiation of a reclaimed water plan, designed to provide a forum for a regional discussion about existing and future needs for reclaimed water.
- Support of the Central Puget Sound Water Supply Forum, as needed, to address concerns related to safe and reliable drinking water supplies and protection of fish and wildlife habitat.
- Continued progress on the Brightwater Reclaimed Water System South Segment, which will extend from the North Creek Pump Station in Bothell to the Sammamish Valley near the Willows Run Golf Course. It is designed to convey up to 7 million gallons per day of reclaimed water, for non-potable uses. Construction is scheduled for completion in 2011.
- Continued monitoring and modeling of climate change impacts on instream flows.
 A pilot analysis is underway to assess impacts of climate change on flows in Juanita Creek.
- Completion of draft report on streamflow conditions, wetland conditions and groundwater systems in King County in support of the Reclaimed Water Comprehensive Plan effort.
- Support of the Puget Sound Partnership and the Department of Ecology on climate change impacts to water quality.

Land Use, Buildings and Transportation Infrastructure

- Development of a Vulnerable Facilities Inventory on sea level rise impacts to
 wastewater treatment infrastructure, in collaboration with climate science experts
 to determine the extent of on-site flooding that might be expected, using future
 climate change scenarios. The model developed to complete this work has been
 converted to a geographic information systems (GIS) tool that can be used to
 determine on-site flooding for other types of facilities and infrastructure. The tool
 is now posted online for use by other divisions and governments.
- Incorporation of climate change impacts and preparedness considerations into the 2008 King County Comprehensive Plan Update, adopted in October 2008.

Biodiversity and Ecosystems

 Completion of the 2008 King County Biodiversity Report, on the status of biodiversity in the King County region.